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HEAVY COMBINED HORIZONTAL DRILLING MACHINE MODEL 7232

Foreign Technology Division
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**HEAVY COMBINED HORIZONTAL DRILLING MACHINE
MODEL 7232**

The machine (Figure 1) is manufactured by "heavy machine hydro-press" and is intended for turning, milling, drilling, and grinding of details with large dimensions and work masses up to 100 tons.

The following operations may be done on the machine: rough and final lathe work on horizontal, vertical, and inclined planes in the direction lengthwise and transversal with respect to the mass; rough and final milling on horizontal, vertical and inclined planes lengthwise and transversal with respect to the mass; rough and final drilling and scraping out in horizontal, vertical and inclined openings; work on planes with angular and universal milling heads in each angle of inaccessible places; grinding on horizontal, vertical, and inclined planes. It is possible to machine the details from five sides without removing the part or additional settings.

The construction of the machine embodies the newest achievements in the area of heavy machine construction. Each drive mechanism of the principal motion and feed motions has gearless remote control. In comparison with similar machines of foreign firms, the given machine has a lower minimal lathe speed of the table, and produces a maximum cutting force at higher speeds. It is supplied with an arrangement for remote reversal, feed selection and shift measurement

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of the working parts during milling and lathe work. There is an arrangement for a mechanized fastening of instruments onto milling-lathe tool holders.

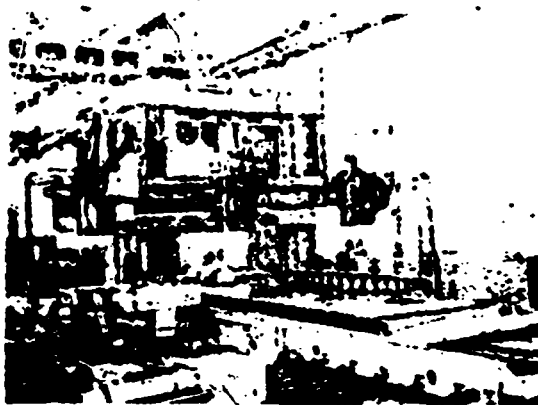


Figure 1

The machine is supplied with a solid revolving tool holder with hydraulic pressure tightening. The cutting angles are variable, by virtue of which a highly productive rough and final lathe operation is possible. The grinding mobile tool holder of the machine is used for processing on surfaces with a front as well as one peripheral to a sphere. With the help of revolving tool holders (in combination with the angular and universal milling head), inaccessible places may be handled.

Each moving mechanism of the main motion and of the feed motion is supplied with thyristor transformers. The remote control system with a hanging panel and mechanical shift provides for convenient servicing. The easy-to-carry panels allow the operator to closely approach the site of machining.

All machine rails are covered with anti-friction copper alloy. The shavings are removed from the cutting area through transportation lanes. During final lathe work, the cutting tool is cooled with kerosene. During milling and grinding, the instrument is cooled with an emulsion which is dispersed in a thick spray.

The examination of the machine showed a high stability and freedom from vibrations and good accuracy when processing cast iron and steel.

Under different forms of machining, the more characteristic technical data of the machine are the following.

For lathe work:

Maximum dimensions of machined part (width x length x height):

3200 x 8000 x 2800 mm

Range of speeds of the table mass: 1.2 - 60 m/min

Maximum cutting force: 320 kN

For milling:

Maximum dimensions of the machined part: 3000 x 8000 x 2800 mm

Limits for spindle revolution: 2 - 630 rpm

Limits for table motion: 6 - 1200 mm/min

Main drive mechanism power: 42 kW

For grinding:

Maximum dimensions of machined part: 3200 x 8000 x 2600 mm

Speed limits for the table: 1.2 - 20 m/min

Maximum turn angle for mobile tool holder: $\pm 90^\circ$

The dimensions of the machine are: length, 23,000 mm; width, 12,000 mm; height, 8000 mm, and mass, 270 tons.

(Machine Construction, 1974, Book 7, page 23)

*Translator's note. Original text translated from the Russian into Bulgarian.